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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,937	12/19/2001	Dong June Kim	MRE-0047	2861
34610	7590	06/16/2005	EXAMINER	
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			CHIN, PAUL T	
			ART UNIT	PAPER NUMBER

3652

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/020,937

Applicant(s)

KIM, DONG JUNE

Examiner

PAUL T. CHIN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The amendment filed February 17, 2005, and the arguments presented therewith have been carefully considered. With regard to Kaiser, Jr. et al. (5,741,174), the arguments are persuasive in light of the amended claims and the claim rejections have been withdrawn. However, regarding the Japanese Patent (JP 63-162129) and Asai et al. (6,012,222), they are not persuasive. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by the Japanese Patent (JP 63-162129).

The Japanese Patent (JP 63-162129) discloses a device comprising a rotation unit, or a motor (5) configured for generating a rotary force and transmitting the rotatory force; a ball spline unit (7,8) configured for performing a rotation movement and a vertical reciprocation movement by the rotary force generated from the motor; a rotation shaft unit (11) configured to be moved in a vertical direction and rotated for mounting part (13); and a plurality of couplings (see Exhibit A of the previous office action, mailed on November 29, 2004) configured for transmitting the rotary force of the rotation central axis to the ball spline unit and for transmitting a rotary force of the ball spline unit to the rotation shaft unit.

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Re claims 2 and 6, the Japanese Patent (JP 63-162129) shows a first coupling (see Exhibit A, Figs. 1 and 2) for connecting the motor to a first end portion of the ball spline unit, and a second coupling (10), a universal joint, for connecting a second end portion of the ball spline unit (8) to the rotation shaft unit (11).

Re claims 3 and 12, the first coupling is connected between the motor and the ball spline nut (Fig. 1).

Re claims 4, 13, and 14, the second coupling is designed to maintain a predetermined distance between the second end of the ball spline shaft (8) and the rotation shaft unit (11).

Re claims 5, 8, and 11, a bearing (4) being substantially mounted on the ball spline unit via a rotating shaft (3) to align the rotation axis of the motor and the rotational axis of the ball spline unit, capable of restricting the rotation radius of the rotation shaft unit (11) and allowing the ball spline unit (6, 8) to rotate.

Re claim 10, figure 1 of the Japanese Patent clearly shows the first end of the ball spline unit comprises a ball spline nut (7) and the second end of the ball spline unit comprises a splined shaft (8). It is pointed out that the Japanese Patent device discloses all the structural limitations and is configured or capable of performing the recited functional limitations.

4. Claims 1, 5-9, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Asai et al. (6,012,222).

Asai et al. (6,012,222) discloses a parts suction head of a surface mount device comprising a z-axis motor (44) (Fig. 4) to rotate a ball screw (38) allowing a lift (28) (Fig. 2) and a theta  $\theta$ -axis motor (76) (Fig. 4) configured to cause a gear wheel (74)

configured to generate a rotary force and transmit the rotary force with respect to a central axis; a ball spline unit (84,118,126) configured for performing a rotation movement and a reciprocation movement by the rotary force generated from the motors; a rotation shaft unit comprising a rotation shaft (152), wherein the rotation shaft unit is configured to be moved in a vertical direction; and a plurality of couplings (see below) configured for transmitting the rotary force of the rotation central axis to the ball spline unit and for transmitting a rotary force of the ball spline unit to the rotation shaft unit. Re claim 6, Asai et al. (6,012,222) also shows a gear wheel (74), which is a rotary unit, configured to generate a rotary force and transmit the rotary force with respect to a central axis; a rotary member (52) and a rotary bolt (88), which can be considered as a first coupling that rotatably and substantially couples to the rotation unit (74) to a substantially first end or the upper end of the support shaft (84) of the ball spline unit; and a cylinder suction pipe holder assembly (150), which can be considered as a second coupling, that rotationally couples a second end of the ball spline unit (126) to the rotation shaft (152).

It is pointed out that Asai et al. (6,012,222), as broadly recited, discloses all the structural limitations and is configured for or capable of performing the recited functions.

Re claim 7, Asai et al. (6,012,222) also shows the rotation unit comprising a motor (44,76) (Fig. 4).

Re claims 5,8,9, and 11, Asai et al. (6,012,222) further shows a bearing (54, 56) (Fig. 2) being substantially mounted on the ball spline unit (84,118,126) to align the rotation axis of the rotation unit (74) and the rotational axis of the ball spline unit, capable of restricting the rotation radius of the rotations shaft unit (152) and allowing the ball spline unit to rotate.

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Re claim 13, Asai et al. (6,012,222) shows that the second coupling (150) is configured to separate a lower end of the ball spline unit from an upper end of the rotation shaft (152) at a predetermined distance.

Re claim 14, the second coupling (150) of Asai et al. (6,012,222) is capable of allowing the rotation shaft (152) to be detached from the ball spline unit.

5. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Kouichi et al. (the Japanese Patent JP 05-177478).

Kouichi et al. (the Japanese Patent JP 05-177478) discloses a rotary device comprising a rotation unit, or a motor (114) configured for generating a rotary force and transmitting the rotatory force; a ball spline unit (80,86) having a ball spline nut and a spline shaft (80) (see Fig. 4) configured for performing a rotation movement and a reciprocation movement by the rotary force generated from the motor; a rotation shaft unit comprising a rotation shaft (72), wherein the rotation shaft unit is configured to be moved in a horizontal direction; and a plurality of couplings, a first coupling and a second coupling (78) (Fig. 4). Note that a universal joint 90, a gear 96, can be considered as a first coupling which connects the spline unit (80,86) and the motor output shaft (116).

Re claim 5, a bearing to align the rotating gear 96 and the spline unit 80,86 as shown in figure 4.

### ***Response to Arguments***

6. The amendment filed February 17, 2005, and the arguments presented therewith have been carefully considered. Regarding Kaiser, Jr. et al. (5,741,174), the arguments are persuasive in light of the amended claims and the claim rejections have been withdrawn.

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However, regarding the Japanese Patent (JP 63-162129) and Asai et al. (6,012,222), they are not persuasive.

Regarding the Japanese Patent (JP 63-162129), applicant argues that “this un-numbered, unreferenced element connects an end of the motor shaft to a first end of the ball spline unit” (1<sup>st</sup> paragraph of page 8). The argument is not persuasive. Note that applicant does not positively claim that the element connects an end of the motor shaft to a first end of the ball spline unit, as applicant argues. Claim 1 recites that a motor “is *configured* to generate a rotary force and to transmit the rotary force to a motor shaft positioned along a central axis of the motor”. The meaning of the word “configured” is to “set up for operation especially in particular way” according to Merriam-Webster Dictionary. It is pointed out that a “motor” is set up or designed to generate a rotary force and to transmit the rotary force to a motor shaft positioned along a central axis of the motor. The motor shaft is positioned along a central axis of the motor. The rotating shaft 3 and bearings 4, which can be considered as a first coupling, is “configured to connect an end of the motor shaft to a first end of the ball spline unit 6,7”. Applicant only recites “a first coupling configured to connect” and “a second coupling configured to transmit” and the reference is capable of performing the required functions. The rotating shaft 3 is rotated by the motor 5 thereby rotate the rotation shaft 11 (see abstract). Therefore, the reference meets the recited claims.

Regarding Asai et al. (6,012,222), applicant argues that “the rotary force generated by the motor 76 and transmitted by the gear 74 is transmitted to the rotatable member 52, and not to motor shaft positioned along a central axis of the motor, as recited in claim 1” (page 3). The argument is incorrect because applicant does not claim that the “ball spline unit” and “the rotation shaft unit” are on the “central axis of the motor”. Applicant

merely recites that "the ball spline unit is configured to rotate and reciprocate" and "the rotation shaft is configured to be moved". It is pointed out that "the ball spline unit" and "the rotation shaft" can be rotated or moved by the rotation of a motor wherein the motor is not necessarily positioned (in line or on the central axis of the motor) with the "ball spline" and "the rotation shaft". Both of the "the ball spline unit" and "the rotation shaft" can be configured to rotate by using the rotary force of a motor. Asai et al. (6,012,222), teaches that the rotary force is generated by the motor 76 and is transmitted by the gear 74 causing the rotatable member 52 to rotate. It is pointed also out that the rotary shaft (152) is fit in the cylindrical holder (158) (Col 12, lines 30-42) and the rotating cylindrical suction pipe holder 150 would substantially transmit the rotary force from the ball spline to the cylinder suction pipe 152 since the structures are rotating together. The suction pipe 152 would not rotate if the cylinder suction pipe 152 does not transmit a rotary force. Therefore, Asai's device is capable of performing the recited function.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Applicant's amendment (the additions of new limitations in claims 1-3 and 5 in combination with other structural limitations) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL T. CHIN whose telephone number is (571) 272-6922. The examiner can normally be reached on MON-THURS (7:30 -6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, EILEEN LILLIS can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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